180.101 Principles of Macroeconomics, Fall 2011
Final Exam : Practice Problems

1. Granting your oddly specific wish, a genie magically creates a suitcase containing four hundred pennies, four quarters, five thousand \$100 bills, and a check from the Fed for ten thousand dollars payable to "cash".
   (a) How much currency did the genie give you? And how much M1?
   (b) If you also have a debit card with a \$2000 limit, a \$1 million savings deposit, and a credit card with a \$200 credit limit, what is your total quantity of M2?
   (c) If you owe \$2005 to Johns Hopkins University for tuition, what is your net worth?
   (d) In a fit of generosity, you give the suitcase to your best friend, who deposits all of its contents at Bank A. If the required reserve ratio is 5%, explain how the money supply will be affected (in total). What is the deposit multiplier in this question?

2. Explain the following concepts.
   (a) Explain what it means for a bank to be "reserve deficient". What must a bank do if it finds itself in this situation?
   (b) Explain what economists mean when they refer to banks acquiring "earning assets". Give some examples of earning assets, and explain why banks would want them.

3. Suppose the budget is defined as given in class: $Bud = G + TR + InP - TX$.
   (a) Identify which elements of the above equation are government spending and which are government receipts.
   (b) Explain the concept of the national debt. Describe very briefly the basic relationship between the budget and the national debt.
   (c) Suppose $TX = \bar{TX} + tY$. To what extent can the government control the budget?

4. For this question, assume that the required reserve ratio is 20%, and the economy is operating under ordinary supply conditions. Suppose the Federal Reserve decides to sell \$80 billion of U.S. Treasury Bills on the open market.
   (a) How would the money supply change as a result of this action? Explain carefully, using any diagrams as appropriate.
   (b) Why would the Fed choose to take such a course of action? What is the goal of this policy? Carefully explain how this action will achieve the result desired by the Fed, using any diagrams as appropriate.
   (c) What are the benefits and costs of this action, in both the short run and the long run? Explain carefully, using any diagrams as appropriate.

5. Consider a country operating under slack conditions with a government that happens to be running a balanced budget. Citizens of this country have recently become distraught because a close ally is entering a recession, undermining confidence in their own economy.

(a) How would this event be captured in our model? Carefully describe in economic terms how this change would affect GDP and the price level, using (and explaining) any relevant graphs.

(b) Suppose the government wants to fight these changes by increasing government purchases of goods and services. Is this a wise course of action? Carefully explain in economic terms how this will or will not achieve the government's goal, using any relevant graphs.

(c) How would your answer to part (b) change if the economy were instead operating under relatively tight conditions (for this part only)?

(d) How will the national debt be affected by this policy action? Will the magnitude of the change in the national debt be greater than, less than, or equal to the change in government spending? Explain carefully.

(e) How will private investment spending be affected by these events? Explain carefully in economic terms, using any relevant graphs.

(f) Carefully explain the long run consequences of this policy. What fiscal policy actions can the government take to minimize these long run consequences?

(g) What are the differences between money finance and debt finance? What additional costs and benefits are associated with using money finance rather than debt finance? Explain carefully, using any relevant graphs.

6. Consider a country with a total population of 68.2 million, of whom 34.8 million hold a job while 2.7 million do not have a job but are seeking work.

   (a) Calculate the labor force participation rate, the unemployment rate, and the employment rate for this country, briefly explaining your answers.

   (b) Economists estimate that the natural rate of unemployment in this country is 5.4%. Explain what is meant by this, and calculate the cyclical unemployment rate. Is this economy likely in a boom or a recession?

   (c) Suppose that as time passes, none of the 2.7 million unemployed individuals are able to find a job. Because of this, one half million of them give up looking for a job. How does the unemployment rate change because of this? Briefly comment on this phenomenon.

   (d) In the long run, what do you expect will happen to the unemployment rate? Carefully explain using economic terms (and any relevant graphs) how this will occur.

   (e) Suppose the government wanted to speed up the changes you described in part (d). What actions could they take to do so?

7. Consider a country with a population of ten million people and a GDP of $10 billion. The growth rate of the population and GDP are both 10% per year. Calculate income per capita and the growth rate of income per capita for this country.

8. Consider the historically poor and unstable country of Hooveria, which has experienced a low growth rate of real GDP per capita over the past sixty years. What specific policy recommendations would you make to help Hooveria increase its economic growth? Explain how these recommendations will help, and why they are better than other potential policy actions in this specific situation. (Note: there is no single "right" answer, but there are plenty of wrong ones.)